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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,547	03/22/2004	Brian Hart	CISCO-7703	3426
21921	7590	10/30/2007		
DOV ROSENFELD 5507 COLLEGE AVE SUITE 2 OAKLAND, CA 94618			EXAMINER RYMAN, DANIEL J	
			ART UNIT	PAPER NUMBER
			2616	
			MAIL DATE	DELIVERY MODE
			10/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,547	HART ET AL.	
	Examiner	Art Unit	
	Daniel J. Ryman	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☒ Claim(s) 1-8, 11-17, 19-22, 24, 27, 28, 30, 35, 37 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/17/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it exceeds 150 words in length and contains numerous grammatical errors. Correction is required. See MPEP § 608.01(b).
2. In addition, Examiner requests that the application information in paragraphs [0001], [0010], [0044], [0055], [0057], [0077], [0131], [0157], and [0177] be updated to reflect any changes in the status of the referenced applications.

Claim Objections

3. Claim 1 is objected to because of the following informalities: in line 3, “a received packet” should be “the received packet” to clarify that the packet in line 3 is the same packet as the packet in line 1; in line 6, “the initial” should be “an initial”; in line 12, “the modulated subcarriers” should be “the subcarriers” as recited in line 3 (alternatively, “the subcarriers” in line 3 should be “the modulated subcarriers”); and in line 12, “the received signal” should be “the received packet”. Appropriate correction is required.
4. Claim 2 is objected to because of the following informalities: in line 1, “the channel” should be “the initial channel”; in line 2, “the channel” should be “the initial channel”; in line 3, “the known part” should be “the known transmitted part”; and in line 4, “the known part” should be “the known transmitted part”. Appropriate correction is required.
5. Claim 3 is objected to because of the following informalities: in line 1, “the channel” should be “the initial channel”; in line 2, “post factoring” should be “post factored”; in line 3, “the known part” should be “the known transmitted part”; and in lines 3-4, “the known part” should be “the known transmitted part”. Appropriate correction is required.

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6. Claim 4 is objected to because of the following informalities: in line 3, "the channel" should be "the initial channel". Appropriate correction is required.

7. Claim 5 is objected to because of the following informalities: in line 3, "the channel" should be "the initial channel". Appropriate correction is required.

8. Claim 6 is objected to because of the following informalities: in line 1, "the decision circuit" should be "the decision and channel drift circuit" to comply with the recitations of claim 1. Appropriate correction is required.

9. Claim 7 is objected to because of the following informalities: in line 1, "the decision circuit" should be "the decision and channel drift circuit" to comply with the recitations of claim 1. Appropriate correction is required.

10. Claim 8 is objected to because of the following informalities: in line 3, "the decision circuit" should be "the decision and channel drift circuit" to comply with the recitations of claim 1. In addition, in line 5, "carrier drift" should be "channel drift". Appropriate correction is required.

11. Claim 11 is objected to because of the following informalities: in line 2, "the received signal field" should be "the received field modulated at a known rate". Appropriate correction is required.

12. Claim 12 is objected to because of the following informalities: in line 2, "EVM" should be "error vector magnitude (EVM)" and, in line 2, "the received signal field" should be "the received field modulated at a known rate". Appropriate correction is required.

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13. Claim 13 is objected to because of the following informalities: in line 2, “the received signal field” should be “the received field modulated at a known rate”. Appropriate correction is required.

14. Claim 14 is objected to because of the following informalities: in line 1, “the decision circuit” should be “the decision and channel drift circuit” to comply with the recitations of claim 1. Appropriate correction is required.

15. Claim 15 is objected to because of the following informalities: in line 1, “the decision circuit” should be “the decision and channel drift circuit” to comply with the recitations of claim 1. Appropriate correction is required.

16. Claim 16 is objected to because of the following informalities: in line 1, “the channel drift circuit” should be “the decision and channel drift circuit” to comply with the recitations of claim 1. Appropriate correction is required.

17. Claim 17 is objected to because of the following informalities: in line 1, “known part” should be “known transmitted part”; in line 2, “first known part” should be “first known portion” to distinguish between the parts and the parts of the parts; in line 3, “known part” should be “known portion”; in line 5, “the first part” should be “the first known portion”; in line 5, “wherein initial” should be “wherein the initial”; in line 5, “and memory are” should be “and the memory subsystem are”; in line 7, “second parts” should be “second known portion”; in line 7, “signals” should be “symbols”; in line 7 “second known part” should be “second known portion”; and in line 9, “second parts” should be “second known portions”. Appropriate correction is required.

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18. Claim 19 is objected to because of the following informalities: in lines 1-2, “wherein the first and second part each include a known symbol” substantially repeats the limitation “wherein the known part of the packet includes a first known part of at least one known symbol and a second known part of at least one known symbol” in claim 17; in line 1, “second part” should be “second known portions”; in line 4, “known part” should be “known portion”; and in line 6, “the memory” should be “the memory subsystem”. Appropriate correction is required.

19. Claim 20 is objected to because of the following informalities: in line 2, “post factoring” should be “post factored”. Appropriate correction is required.

20. Claim 21 is objected to because of the following informalities: in line 2, “the channel drift circuit” should be “the decision and channel drift circuit”. Appropriate correction is required.

21. Claim 22 is objected to because of the following informalities: in line 1, “memory” should be “memory subsystem”. Appropriate correction is required.

22. Claim 24 is objected to because of the following informalities: in line 2, “memory” should be “memory subsystem”. Appropriate correction is required.

23. Claim 27 is objected to because of the following informalities: in lines 2-3 “that the amount of smoothing of the channel smoother is selected” should be “that one smoother providing a given amount of smoothing is selected”; in line 4, “the first part” should be “the first known portion”; and in line 5, “the second part” should be “the second known portion”.

Appropriate correction is required.

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24. Claim 28 is objected to because of the following informalities: in line 3, “a received packet” should be “the received packet”; in line 13, “received signal” should be “received packet”. Appropriate correction is required.

25. Claim 30 is objected to because of the following informalities: in line 2, “the channel” should be “the initial channel”. Appropriate correction is required.

26. Claim 35 is objected to because of the following informalities: in line 3, “constellation” should be “constellation values”. Appropriate correction is required.

27. Claim 37 is objected to because of the following informalities: in line 3, “a first function” should be “the function of the first estimate”. Appropriate correction is required.

28. Claim 38 is objected to because of the following informalities: in line 3, “a first function” should be “the function of the first estimate”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

29. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

30. Claims 1-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

31. Claim 1 recites in lines 8-10: “a memory subsystem coupled to the initial channel calculator initially to store the function of the initial channel response, and then to store updates of the function of the initial channel response”. It is unclear whether the term “then” requires that the memory subsystem store the updates in place of the initial channel response (i.e. the memory first stores only the initial channel response and then stores only the updates) or that the

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memory subsystem store the updates in addition to the initial channel response (i.e. the memory subsystem stores the initial channel response and then stores the initial channel response and the updates).

32. Claim 1 recites the limitation "the respective channel" in lines 12-13. There is insufficient antecedent basis for this limitation in the claim.

33. Claim 1 recites the limitation "the contents of the memory subsystem" in line 13. There is insufficient antecedent basis for this limitation in the claim. While the memory subsystem is disclosed as having contents, such as the initial channel response and updates to the channel response, it is unclear whether "the contents of the memory subsystem" refers to all of the contents of the memory subsystem, i.e. the initial channel response and the updates for each subcarrier, or whether "the contents of the memory subsystem" refers to only a portion of the contents of the memory subsystem.

34. Claim 1 recites the limitation "the pre-decision constellation values" in lines 17-18. There is insufficient antecedent basis for this limitation in the claim.

35. Claim 1 recites the limitation "the pre-update contents of the memory subsystem" in lines 20-21. There is insufficient antecedent basis for this limitation in the claim. While the memory subsystem is disclosed as having contents, such as the initial channel response for all the subcarriers, it is unclear whether "the pre-update contents of the memory subsystem" refers to all of the contents of the memory subsystem, i.e. the initial channel response for each subcarrier, or whether "the pre-update contents of the memory subsystem" refers to only a portion of the contents of the memory subsystem. It is also unclear whether the "pre-update contents" are the

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contents of the memory subsystem before any channel response has been updated or whether the “pre-update contents” are the contents of the memory subsystem prior to a specific update.

36. Claim 1, lines 19-21, recites: a circuit “to update the memory subsystem with a weighted sum of the pre-update contents of the memory subsystem and an update”. It is unclear whether the update is part of the weighted sum or whether the update is part of the update to the memory subsystem in addition to the weighted sum.

37. Claim 1 recites the limitation “measure of the channel drift from the post decision constellation values and the pre-decision constellation values” in lines 17-18. Claim 1 also recites the limitation “measure of the channel drift between symbols” in line 22. It is unclear whether the measure of channel drift is “from the post decision constellation values and the pre-decision constellation values” or whether the measure of channel drift is “between symbols”.

38. Claim 1 recites the limitation “the relative weightings” in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

39. Claim 2 recites the limitation “the known value” in line 3. There is insufficient antecedent basis for this limitation in the claim.

40. Claim 2 recites the limitation “a factoring of the known part is included” in line 4. It is unclear whether the “factoring” is a step or a circuit.

41. Claim 2 recites the limitation “channel correcting” in lines 4-5. There is insufficient antecedent basis for this limitation in the claim. In the claim, it is unclear which component constitutes the “channel correcting” that the “factoring” is included prior to or concurrent with.

42. Claim 3 recites the limitation “the known value” in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

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43. Claim 3 recites the limitation “a factoring of the known part is included” in lines 3-4. It is unclear whether the “factoring” is a step or a circuit.

44. Claim 6 recites: “wherein the decision circuit forms a hard decision.” However, claim 1, which claim 6 depends upon, never discloses that the decision circuit makes any decision.

Therefore, it is unclear whether this hard decision is the same as the pre-decision constellation values or the post-decision constellation values or whether this hard decision is different than the constellation values.

45. Claim 7 recites: “wherein the decision circuit produces re-encoded decoded decisions.” However, claim 1, which claim 6 depends upon, never discloses that the decision circuit makes any decision. Therefore, it is unclear whether this re-encoded decoded decision is the same as the pre-decision constellation values or the post-decision constellation values or whether this hard decision is different than the constellation values. In addition, it is unclear what constitutes a “re-encoded decoded decision.” Is this a decision that has been decoded and then re-encoded or is this a re-encoded decision that has been decoded?

46. Claim 8 recites: “the pilot correction circuit to correct for one or both of channel drift and timing errors, such that the channel corrector need not account for carrier drift and timing errors in correcting for the channel.” Claim 1, which claim 8 depends upon, recites: “a decision and channel drift circuit coupled to the channel corrector.” These recitations imply that the absent the pilot correction circuit, the channel corrector will correct for carrier drift and timing errors, where the channel corrector is situation prior to the decision and channel drift circuit. It is unclear why a decision and channel drift circuit is needed to measure the channel drift when the channel corrector has already corrected this drift. In addition, it is unclear from claim 8 whether

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the channel corrector will always account for channel drift and timing errors in correcting for the channel unless a pilot correction circuit is present. Simply, is the phrase "such that the channel corrector need not account for carrier drift and timing errors in correcting for the channel" a limitation?

47. Claim 9 recites: "An apparatus as recited in claim 1, wherein the receiver". Claim 1, which claim 9 depends upon, recites: "In an OFDM receiver . . . an apparatus comprising". Because claim 1 discloses that the apparatus is part of the receiver, it is unclear whether the limitations of claim 9 are part of the apparatus, which in turn is part of the receiver, or whether the limitations of claim 9 are part of the receiver only.

48. Claim 10 recites: "An apparatus as recited in claim 1, wherein the receiver". Claim 1, which claim 10 depends upon, recites: "In an OFDM receiver . . . an apparatus comprising". Because claim 1 discloses that the apparatus is part of the receiver, it is unclear whether the limitations of claim 10 are part of the apparatus, which in turn is part of the receiver, or whether the limitations of claim 10 are part of the receiver only.

49. Claim 12 recites the limitation "the measure of EVM" in line 2. There is insufficient antecedent basis for this limitation in the claim.

50. Claim 16 recites the limitation "the decision made for each constellation point " in line 2. There is insufficient antecedent basis for this limitation in the claim.

51. Claim 16 recites the limitation "the inverse re-modulated decision value" in line 3. There is insufficient antecedent basis for this limitation in the claim.

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52. Claim 16 recites the limitation “a signal that varies as the measure of the channel drift” in line 4. It is unclear whether the signal varies as the measure of the channel drift varies or whether the signal varies based on the measure of the channel drift.

53. Claim 17 recites the limitation “the initial channel calculator” in line 3. There is insufficient antecedent basis for this limitation in the claim.

54. Claim 17 recites the limitation “a function of the channel response” in line 4. It is unclear whether this function is the function of the initial channel response from claim 1. Thus, Applicant should change “a function of the channel response” to either “the function of the initial channel response” or “another function of the channel response”.

55. Claim 17 recites the limitation “the functions of the channel responses corresponding to the . . . second parts” in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

56. Claim 17 recites the limitation “the channel correcting” in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

57. Claim 19 recites the limitation “the known value of the subcarrier of the known symbol” in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

58. Claim 19 recites the limitation “a factoring by the known part is included” in line 4. It is unclear whether the “factoring” is a step or a circuit.

59. Claim 19 recites the limitation “channel correcting” in line 5. There is insufficient antecedent basis for this limitation in the claim.

60. Claim 19 recites the limitation “the channel responses” in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

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61. Claim 19 recites the limitation "the subcarriers corresponding to the known symbol set" in line 7. There is insufficient antecedent basis for this limitation in the claim.

62. Claim 20 recites the limitation "wherein the function of the channel response stored in the memory subsystem for a carrier is post factoring". It is unclear whether this is a method step or a circuit given that the limitation takes the form of a method step but the limitation is within a claim directed to an apparatus.

63. Claim 20 recites the limitation "the known value of the subcarrier for the known symbol" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

64. Claim 20 recites the limitation "a factoring unit . . . to factor by the known subcarrier value"; however, claim 20 never discloses what is factored by the known subcarrier value.

65. Claim 24 recites: "a factoring circuit to factor out the known subcarrier values of the known part". It is unclear from which signal the factoring circuit is factoring out the known subcarrier values of the known part.

66. Claim 25 recites the limitation "the channel correcting" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

67. Claim 28 recites: "calculating a function of the initial channel response of subcarriers from the known part of the received packet". This implies that the initial channel response is calculated for each subcarrier resulting in the calculation of multiple functions. Claim 28 also recites: "storing the function of the initial channel response". This implies that there is only a single function of the initial channel response. It is unclear whether multiple or only a single function is calculated. In addition, if multiple functions are calculated, it is unclear to which of these functions "the function" refers.

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68. Claim 28 recites “forming post-decision values”. It is unclear what decision is used to determine if the values are “post decision.”

69. Claim 28 recites the limitation "the pre-update stored function" in line 18. There is insufficient antecedent basis for this limitation in the claim.

70. Claim 28 recites in lines 18-19: “forming a weighted sum of the pre-update stored function of the channel response and an update”. It is unclear whether the update is part of the weighted sum or whether the update is part of the update to the memory subsystem in addition to the weighted sum.

71. Claim 28 recites the limitation “forming a measure of the channel drift from the post decision values and the channel corrected constellation values” in lines 16-17. Claim 28 also recites the limitation “measure of the channel drift between symbols” in lines 20-21. It is unclear whether the measure of channel drift is “from the post decision constellation values and the pre-decision constellation values” or whether the measure of channel drift is “between symbols”.

72. Claim 28 recites the limitation "the relative weightings" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

73. Claim 29 recites “storing of the function of the initial channel response for a subcarrier” which suggests that there is a function of the initial channel response for each subcarrier. As outline above, it is unclear in claim 28 whether there is only a single function calculated or whether there is a function calculated for each subcarrier. Thus, claim 29 suggests that the later interpretation is appropriate.

74. Claim 29 recites the limitation "the known value" in line 3. There is insufficient antecedent basis for this limitation in the claim.

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75. Claim 29 recites: "factoring out of the known part from the stored function of the channel response prior to or concurrent with channel correcting." It is unclear what is factored out of the known part.

76. Claim 29 recites the limitation "with channel correcting" in line 6. There is insufficient antecedent basis for this limitation in the claim.

77. Claim 30 recites: "storing of the function of the initial channel response for a subcarrier" which suggests that there is a function of the initial channel response for each subcarrier. As outline above, it is unclear in claim 28 whether there is only a single function calculated or whether there is a function calculated for each subcarrier. Thus, claim 30 suggests that the later interpretation is appropriate.

78. Claim 30 recites: "factoring out of the subcarriers of the known part from the accepted subcarriers corresponding to the know part." It is unclear what is factored out of the subcarriers of the known part.

79. Claim 33 recites the limitation "said forming the decision" in line 1. There is insufficient antecedent basis for this limitation in the claim.

80. Claim 34 recites the limitation "said forming the decision" in line 1. There is insufficient antecedent basis for this limitation in the claim.

81. Claim 35 recites the limitation "forming the decision" in line 5. There is insufficient antecedent basis for this limitation in the claim.

82. Claim 35 recites the limitation "the channel correcting" in line 6. There is insufficient antecedent basis for this limitation in the claim.

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83. Claim 36 recites: "making a decision using the pre-decision constellation point value".

Claim 36 also recites: "re-modulating the decision". It is unclear from the claim what constitutes "the decision". Specifically, it is unclear what is being decided when making the decision and what form the result of the decision takes, such that the decision can be "re-modulated."

84. Claim 38 recites: "the first estimate of the channel response of the subcarrier post factoring by the known value of the subcarrier for the known part." It is unclear what constitutes "post-factoring".

85. Claim 40 recites the limitation "the quantity stored for the subcarrier" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

86. Claim 42 recites: "wherein making the decision includes demodulating, decoding, and re-coding to form a re-coded-decoded decision." It is unclear what decision is demodulated, decoded, and re-coded to from the re-coded-decoded decision.

87. Claim 43 recites: "a pre-decision constellation point". Claim 43 also recites: "a post-decision constellation point value." It is unclear what "decision" is used to determine if a constellation point is a "pre-decision" constellation point or a "post-decision" constellation point.

88. Claim 45 recites: "the subcarrier post factoring by the known value". It is unclear what constitutes "post-factoring".

89. Claim 46 recites: "the memory contents". It is unclear whether every piece of information stored in the memory is included in the phrase "the memory contents" or whether only certain pieces of information are included in "the memory contents".

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90. Claim 47 recites: "the memory contents". It is unclear what if every piece of information stored in the memory is included in the phrase "the memory contents" or whether only certain pieces of information are included in "the memory contents".

91. Claim 48 recites: "wherein the decision circuit forms a hard demodulated decision." It is unclear what decision is formed by the decision circuit to be a "hard demodulated decision".

92. Claim 50 recites the limitation "the post-decision inverse re-modulated value" in line 3. There is insufficient antecedent basis for this limitation in the claim.

93. Claim 51 recites: "wherein the decision circuit includes a demodulator, a decoder, and a re-encoder to form a re-coded-decoded decision." This implies that the decision is demodulated, decoded, and re-encoded to form a re-coded-decoded decision; however, the claim never discloses an original decision that can be demodulated, decoded, and re-encoded. Alternatively, the claim never specifies what is demodulated, decoded, and re-encoded to form the re-coded-decoded decision.

Conclusion

94. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Moose (US 2002/0065047), see ¶¶ [0035]-[0036] and [0039] which pertain to performing an initial channel estimation using a preamble and then updating this initial channel estimation using pilot tone information. Onizawa et al. (USPN 6,608,863) see entire document which pertains to smoothing channel attenuation between subcarriers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
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Daniel Ryman